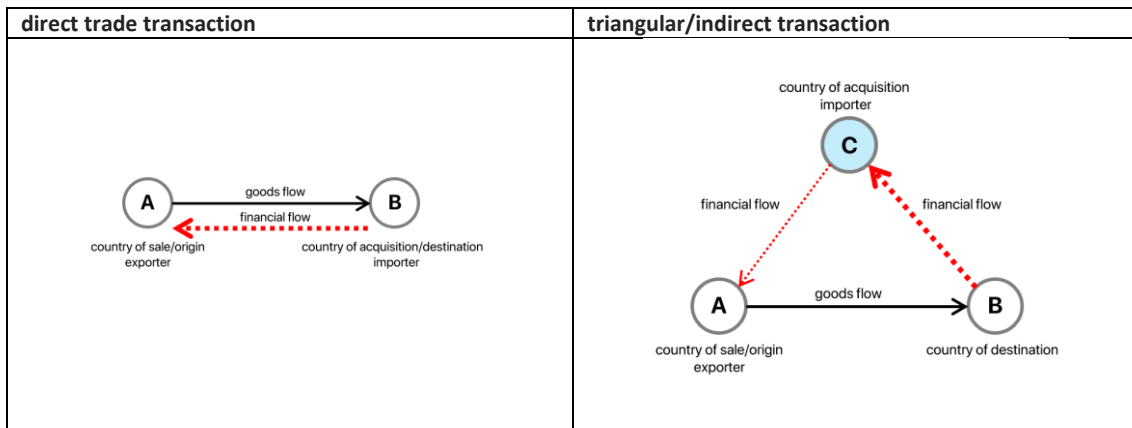


Price Filter Method - Exercise

1. Define the type of each export transaction taking into account the country of acquisition (financial flow) and the country of destination (goods flow): **direct or triangular/indirect**.
Observation: in triangular or indirect export transactions, the country of acquisition is different from the country of destination.



2. Calculate the prices (USD/ton).
3. Detect the outliers.
4. Drop the outliers.
5. Calculate the weighted average prices by day.
6. Insert the weighted average prices in the sheet.
7. Calculate the standard deviation of prices by day.
8. Insert the standard deviation of prices in the sheet.
9. Statistically estimate the price filter using the weighted average price and set the upper and lower bound prices using the standard deviation.
10. Identify the transaction-level invoice prices below the lower bound in the period.
11. Calculate the differences between the lower bound prices and transaction-level invoice prices below the lower bound in the period and estimate the potential underinvoiced amount or undervalued export transactions (abnormally underpriced transactions) in relation to the lower bound price.
12. Calculate the percentual of triangular/indirect transactions with low tax jurisdictions (tax havens or privileged tax regimes).

13. Based on the calculated percentual of triangular/indirect transactions with low tax jurisdictions, answer:

- a. The price filter, statistically estimated using transaction-level trade data collected by the Customs Bureau, might be biased down by cross-border aggressive tax planning strategies?
- b. Alternatively, which databases might be used to construct the price filter?

References:

UN COMTRADE Database: <https://comtrade.un.org/data>

IMF Primary Commodity Prices Database:

<https://www.imf.org/en/Research/commodity-prices>